

Amendments to the Claims

Please cancel Claims 6 and 11-13 without prejudice or disclaimer.

Please amend Claim 1 and add Claim 16 to read as follows.

1. (Currently Amended) A method for manufacturing an ink jet head which includes a discharge port for discharging an ink droplet, an ink flow path communicated with the discharge port, and an energy generating element for discharging the ink droplet from the discharge port, the method for manufacturing an ink jet head comprising:

a process of providing a photodegradable resin layer on a substrate having the energy generating element, the photodegradable resin layer including a binary acrylic copolymer composition, the binary acrylic copolymer composition containing a plurality of acrylic copolymers containing a unit obtained from (meta) acrylic ester as a main component, the binary acrylic copolymer further containing a unit obtained from (meta) acrylic acid, the binary acrylic copolymer composition containing the (meta) acrylic acid unit at a proportion of 5 to 30 weight%, and a weight average molecular weight of the binary acrylic copolymer ranging from 50000 to 300000;

a process of intermolecular crosslinking acrylic copolymers, the number of carboxyl group included in the unit obtained from (meta) acrylic acid in the acrylic copolymer in the acrylic copolymer composition being not more than 20% of the number of carboxyl group used for the intermolecular crosslinking;

a process of forming a structure which becomes the ink flow path by exposing and developing the photodegradable resin layer;

a process of coating the substrate having the structure which becomes the ink flow path with a negative type photosensitive resin layer;

a process of forming the ink discharge port in the negative type photosensitive resin layer; and

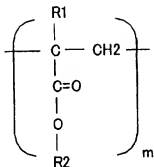
a process of forming the ink flow path communicated with the discharge port by removing the structure which becomes the ink flow path,

wherein the photodegradable resin layer includes a binary acrylic copolymer composition, the binary acrylic copolymer composition contains a unit obtained from (meta) acrylic ester as a main component, the binary acrylic copolymer composition further contains a unit obtained from (meta) acrylic acid, the binary acrylic copolymer composition contains the (meta) acrylic acid unit at a proportion of 5 to 30 weight%, and a weight average molecular weight of the binary acrylic copolymer composition ranges from 50000 to 300000, and

wherein a developing solution is used in the process of forming the structure which becomes the ink flow path, the developing solution containing glycol ether having carbon numbers not lower than 6, the glycol ether being mixable with water at an arbitrary proportion, a nitrogen-containing basic organic solvent, and water.

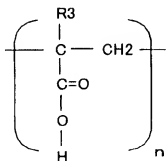
2. (Previously Presented) A method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic ester is expressed by General Formula (1) and the (meta) acrylic acid is expressed by General Formula (2),

General Formula (1)



(where R1 is a hydrogen or an alkyl group in which carbon numbers range from 1 to 3, R2 is an alkyl group in which the carbon numbers range from 1 to 3, and m is a positive integer)

General Formula (2)



(where R3 is a hydrogen or an alkyl group in which carbon numbers range from 1 to 3 and n is a positive integer).

3. (Previously Presented) A method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic ester includes methacrylate ester.

4. (Original) A method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic acid is methacrylic acid.

5. (Original) A method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic ester includes methacrylate ester, and the (meta) acrylic acid is methacrylic acid.

6.-7. (Cancelled)

8. (Previously Presented) A method for manufacturing an ink jet head according to claim 1, wherein the glycol ether is at least one of ethylene glycol monobutyl ether and diethylene glycol monobutyl ether.

9. (Previously Presented) A method for manufacturing an ink jet head according to claim 1, wherein the nitrogen-containing basic organic solvent is at least one of ethanolamine and morpholine.

10. (Previously Presented) A method for manufacturing an ink jet head according to claim 1, wherein a solvent used for a coating resin mainly containing methyl isobutyl ketone and/or xylene is used in the process of coating with the negative type photosensitive resin layer.

11.-13. (Cancelled)

14. (Previously Presented) A method for manufacturing an ink jet head according to claim 1, wherein the weight average molecular weight of the binary acrylic copolymer composition is greater than 50000 and not greater than 300000.

15. (Previously Presented) A method for manufacturing an ink jet head according to claim 14, wherein the weight average molecular weight of the binary acrylic copolymer composition ranges from 170000 to 300000.

16. (New) A method for manufacturing an ink jet head which includes a discharge port for discharging an ink droplet, an ink flow path communicated with the discharge port, and an energy generating element for discharging the ink droplet from the discharge port, the method for manufacturing an ink jet head comprising:

a process of providing a photodegradable resin layer on a substrate having the energy generating element, the photodegradable resin layer including a binary acrylic copolymer composition, the binary acrylic copolymer composition containing a plurality of acrylic

copolymers containing a unit obtained from (meta) acrylic ester as a main component, the binary acrylic copolymer further containing a unit obtained from (meta) acrylic acid, the binary acrylic copolymer composition containing the (meta) acrylic acid unit at a proportion of 5 to 30 weight%, and a weight average molecular weight of the binary acrylic copolymer ranging from 50000 to 300000;

a process of intermolecular crosslinking acrylic copolymers, the number of carboxyl group included in the unit obtained from (meta) acrylic acid in the acrylic copolymer in the acrylic copolymer composition being not more than 20% of the number of carboxyl group used for the intermolecular crosslinking;

a process of forming a structure which becomes the ink flow path by exposing and developing the photodegradable resin layer;

a process of coating the substrate having the structure which becomes the ink flow path with a negative type photosensitive resin layer;

a process of forming the ink discharge port in the negative type photosensitive resin layer; and

a process of forming the ink flow path communicated with the discharge port by removing the structure which becomes the ink flow path.